LIBRARY
MAR -3 1920
UNIV. OF

THE JOURNAL OF PHILOSOPHY

PSYCHOLOGY

AND

SCIENTIFIC METHODS

VOL. XVII. NO. 5: FEBRUARY 26, 1920

CONTENTS

Christianity and History: II. Allegory and the Contribution of Origen: JAMES T. SHOTWELL 113

A Theory of Knowledge which Foregoes Metaphysics: A Reply to Dr. Schiller: JOHN WARBEKE 120

Societies:

The Twenty-eighth Annual Meeting of the American Psychological Association: ARTHUR I. GATES 125

Reviews and Abstracts of Literature:

Hunter's General Psychology: J. V. BREITWIESER 137

Journals and New Books 138

Notes and News 139

PUBLISHED FORTNIGHTLY

The Journal of Philosophy Psychology and Scientific Methods

There is no similar journal in the field of scientific philosophy. It is issued fortnightly and permits the quick publication of short contributions, prompt reviews, and timely discussions. The contents of the last five issues are as follows:

Volume XVI. No. 26. December 18, 1919

Instrumentalism and Teleology. JOHN M. WARBEKE.
American Philosophical Association: Abstracts of Papers on "The Nature of the Community." WILBUR M. URBAN, M. P. FOLLETT, HAROLD LASKI, J. H. TUFTS.
Reviews and Abstracts of Literature. Journals and New Books. Notes and News.

Volume XVII. No. 1. January 1, 1920

From the Common-Sense Level. SHERLOCK BRONSON GASS.
The Psychological Basis of Values. MAURICE PICARD.
Reviews and Abstracts of Literature. Journals and New Books. Notes and News.

Volume XVII. No. 2. January 15, 1920

Ritter's Organismal Conception of Life. WARNER FITE.
Truth, Value and Biology. F. C. S. SCHILLER.
The Logic of Probable Propositions. RALPH M. EATON.
Reviews and Abstracts of Literature. Journals and New Books. Notes and News.

Volume XVII. No. 3. January 29, 1920

The Need for an Examination of Certain Hypotheses in Mental Tests. BEARDSLEY RUML.
Professor Strong's Theory of "Essence." A. K. ROGERS.
Tests of Truth. RUPERT CLENDON LODGE.
Reviews and Abstracts of Literature. Journals and New Books. Notes and News.

Volume XVII. No. 4. February 12, 1920

Christianity and History: I. Introduction. JAMES T. SHOTWELL.
The Nineteenth Annual Meeting of the American Philosophical Association. HELEN HUSS PARKHURST.
Reviews and Abstracts of Literature. Journals and New Books. Notes and News.

THE JOURNAL OF PHILOSOPHY
PSYCHOLOGY AND SCIENTIFIC METHODS
Sub-Station 84, New York City

$4.00 per annum (26 numbers) **20 cents per copy**

Vol. XVII. No. 5. February 26, 1920

THE JOURNAL OF PHILOSOPHY
PSYCHOLOGY AND SCIENTIFIC METHODS

CHRISTIANITY AND HISTORY

II. Allegory and the Contribution of Origen

IN spite of what has been said to the weakness of Christian historiography, it is possible to take a quite opposite point of view, and to maintain the thesis that, among religions, Christianity is especially notable as resting essentially on a historical basis.

In so far as Christianity was a historical religion, that was due, as has just been said, to the Messianic element in it. Indeed it can be said to have claimed from the beginning that it was a historical religion—a fulfilment of history, one fitting itself into the scheme of social and political evolution in a particular state. The apostles themselves, in their earliest appeal, demanded that one "search the scriptures"—a demand unique in the founding of religions. There is a vast difference, however, between studying history and studying historically. That they did study it, the one fact that the Christians retained the old Testament is ample evidence. That they failed to deal with it adequately, the New Testament is also ample evidence. But since the Christian Messiah was offered to the whole world as well as to the Jews, Christian historiography had two main tasks before it: it had to place the life of Jesus in the history of the Jews, upon the one hand, and in the general history of antiquity, upon the other. The latter problem was not forced upon the church until the pagan world began to take the new religion seriously, and its answer is found in the works of the great apologists. The relation of Christianity to Judaism, however, the Messianic problem proper, was of vital importance from the beginning, for it involved the supreme question whether or not Jesus was the one in whom the prophecies were fulfilled.[1]

[1] The coming of the Messiah was the main continuation of Jewish national history. Messiahship was to the Jews of the time of Christ the embodiment of somewhat the same thought as stirred the Frenchman of the close of the nineteenth century at the recollection of 1870 and the lost provinces, or lent such inspiration in embittered Poland to the prophet-like poetry of Mickiewicz. It was the dream of a deliverer, a belief strengthened rather than crushed by failure and disaster. The whole sad drama of Jewish history may be said to have

One "searched the scriptures" therefore for the evidences of the signs by which the advent could be recognized. The invitation to search them was, in appearance at least, a challenge to a scientific test, that of verification. If the data of the life of Jesus corresponded with the details of the promises, there was a proof that the promises had been fulfilled. But since the fulfilment was not literal, the interpretation could not be literal either. The spiritual Kingdom of the Messiah had to be constructed out of fragmentary and uncertain references, and the only satisfactory way to apply many of them was by symbolism and allegory. Modern scholarship has now discarded messianic prophecy, having discovered that the texts so confidently cited as foretelling the life of Jesus had no such purpose in the minds of their authors. But orthodoxy has held, through all the history of the church, that the texts were applicable and that the proof was thereby established of the harmony of the old and the new dispensations.

We can not turn, however, to the problems of higher criticism. The significant thing for history-writing was the creation of what might be called a new *genre*—that of the allegorical interpretation of texts. The use of allegory to explain, or explain away, texts was not a creation of Christian historians, for the device was not unknown to pagan literature or philosophy. As far back as the sixth century B.C., Homer was interpreted allegorically by Theagenes of Rhegium, and pagan philosophy had constant recourse to allegory to harmonize myth with reason. The Jews too were past-masters in its use; indeed it runs through the prophetic literature alongside that elusive trace of the unattained which gave the prophecies their fascinating charm. One could track it back farther still to the mind of primitive man, where symbol and reality are often confused into a single impression. But in the hands of the Christian theologians, symbolism emerged from the background of thought to dominate the whole situation. The story of realities depended upon the interpretation of the unrealities; and that story of realities was nothing short of a history of the world itself.

Allegorical interpretation of the Old Testament had been developed by the Jewish scholars, especially those of the diaspora, who found themselves thrown into contact with gentile scholars and felt the need of harmonizing Greek thought with their own intellectual heritage. One finds it to the full in the writings of the greatest Jewish philosopher of antiquity, Philo of Alexandria, who

concentrated its expression in the messianic hope—a hope against hope itself. Christianity in offering itself as the realization of that hope was stepping into a definite place in Jewish history, but it was a place to which the Jewish nation as a whole has never admitted it.

lived at the time of Jesus. The extent to which he carried it may be gauged by his description of the Garden of Eden, whose four rivers became the four virtues, prudence, temperance, courage and justice, and the central stream from which they flow, the Divine Wisdom.[2]

The greatest master of Christian allegory was Origen. While not a historian in the stricter sense, he contributed to Christian historiography one of its most remarkable chapters. He not only denied the literal truth of much of Genesis, and explained away the darker happenings in the history of Israel; but, even in the New Testament, he treated as parables or fables such stories as that of the Devil taking Jesus up into a high mountain and showing him the kingdoms of the world. One reads Origen with a startle of surprise. The most learned of the Fathers of the third century was a modern. His commentaries upon the bible might almost pass for the product of the nineteenth century. The age of Lyell and Darwin has seen the same effort of mystic orthodoxy to save the poem of Creation, by making the six days over into geological eras and the story of Adam and Eve a symbol of human fate. Many a sermon upon the reconciliation of science and religion—that supreme subject of modern sermons—might be taken almost bodily from Origen. For his problem was essentially like that which fronts the modern theologian; he had to win from a rationalism which he respected, the denial of its inherent skepticism. Like Philo, a resident of that cosmopolitan center, Alexandria, that meeting-place of races and religions, Origen was a modern among moderns. He was a Greek of subtlest intellect and vast erudition, one of the finest products of the great Hellenic dispersion.[3]

Interpretation of the scriptures by allegory is not, in Origen's eyes, an unwarranted liberty. The scriptures themselves sanction it—allegorically! "There is a hidden and secret meaning," he says, "in each individual word. The treasure of divine wisdom is hid in the vulgar and unpolished vessels of words; as the apostle also points out when he says, 'We have this treasure in earthen vessels.'"[4] Quaintly naïve as such reasoning seems when based upon a single text, its weakness becomes its strength when sufficient texts are adduced to convey the impression that the scriptures themselves do really proclaim their own symbolic character. This Origen endeavors to do. "If the texts of Moses had contained nothing which was to be understood as having a secret meaning, the prophet would not have said in his prayer to God: 'Open thou

[2] *Cf. Allegories of the Sacred Laws,* 1: 19.

[3] *Cf.* Eusebius, *Church History,* Bk. 6, for details of Origen's life.

[4] *De Principiis,* I., 1: 9.

mine eyes and I will behold wondrous things out of thy law (Psalms, 119.18).'" What, he asks, can one make out of the prophecy of Ezekiel except allegorically?[5] Prophetic literature implies allegory in its very structure. But the strongest proof of the legitimacy of allegorical interpretation is its use in the New Testament, and so largely by St. Paul.[6]

The modern critic sees the vicious circle in which such reasoning moves. But he sees it because he denies the hidden meaning, the secret lore, which to the "intellectuals" of the third century was the real heart of phenomena. Symbolism has deeper roots than one suspects. The mysterious efficacy of numbers is as wide as savagery; the secret values of words is a doctrine as universal as speech. They come from untold ages beyond Pythagoras or Heracleitus. The Christian emphasis upon the logos—"the word which became God and the word which was God"—but put the stamp of supreme authority upon a phase of thought intelligible to all antiquity. Gnosticism took hold of that phase, and by insisting upon an inner doctrine which was concealed from the uninitiated, attempted to harmonize Christianity with the parallel cults of paganism. Neo-platonism was doing much the same for paganism itself. The cults of Asia and Egypt were drawn together and interpreted in the light of the worship of Demeter or Dionysus. Origen's point of view is not so naïve as it seems. It was in line with that of his age. The world was a growing one, and yet the world itself was a medley of different civilizations. The only way the ancient could think of overcoming this antithesis between an ideal which unified and phenomena which differed was by denying the essential nature of the differences. We should do the same if it were not for our hypothesis of evolution and the historical attitude of mind. Only when one sees the *impasse* into which the thinkers of antiquity were forced, in their attempts to syncretize a complex and varying world, does one realize by contrast what a tremendous implement of synthesis the evolutionary hypothesis supplies. The only alternative method by which to realize the harmony which does not appear is by symbolism.

If we once grant that texts are not what they seem, there is only one way to learn their true meaning. We must find a key, and that key must be some supreme fact, something so large that the content of the text seems but incidental to it. Christianity supplied such a clue to the interpretation of the Old Testament; and the Old Testament, upon its side, supplied Christianity with the authority of a long antiquity. The value of that antiquity for the basis of a story of obscure, recent happenings in Jerusalem was

[5] *Against Celsus*, 4: 50.

[6] *Op. cit.*, 4: 49.

felt by all apologists, and has been a convincing argument until the present. It was left for the nineteenth century to substitute for symbolism the tests of historical criticism, and thus to see the whole scheme of theological interpretation fade away. But we should not forget that, false as it seems to us in both method and results, the symbolic method made the theologian somewhat of a historian in spite of himself; and we should not expect of the savants of the third century the historical and evolutionary attitude of to-day—which was, so far as we can see, his only alternative.

Symbolism may twist the texts; but a mind like Origen's does not miss the essential point that the texts must be there to twist. Nothing is more interesting in the historiography of early Christianity than to see how Origen came to realize, after all, the paucity of his sources and their inadequacy, particularly those dealing with the history of Christianity itself. He shows this with scholarly frankness in a passage in his famous apology *Against Celsus.* Celsus was a pagan Greek who wrote the most notable attack upon Christianity of which we have record from those early times. His treatise was a powerful and learned criticism of the Christian writings and teachings, especially emphasizing their unscientific character and the credulity of those who believed in them. Origen's reply reveals in more places than one how in him a genuine historical critic was lost in the theologian. To illustrate: Celsus had claimed that before writing his attack he had taken the trouble to acquaint himself with all the Christian doctrines and writings. Origen, drawing on his prodigious knowledge of the bible, shows time and again what a superficial acquaintance it had been—that is, judged according to Origen's method of interpretation. But when Celsus charges the Christians with obscurantism, stating that their teachers generally tell him "Do not investigate," while at the same time exhorting him to believe, Origen takes another tack.[7] He is apparently a little ashamed of the emphasis taken from reason and placed upon faith by his Christian colleagues. He does not actually say as much, but he reminds Celsus that all men have not the leisure to investigate. After this weak admission, however, he turns round, in what is one of the most interesting passages of patristic writing, and demands if Celsus and the pagans do not follow authority as well. Have not Stoics and Platonists a teacher too, whose word they go back to? Celsus believes in an uncreated world and that the flood (Deucalion's) is a fairly modern thing.[8]

[7] *Cf.* I., 12 and 10. The order of citations has been reversed here for clarity.

[8] Celsus also had the idea of a common evolution of ideas and customs and of the borrowings of one nation from another, *e. g.*, circumcision from Egypt (1: 22).

But what authority has he? The dialogues of Plato? But Moses saw more clearly than Plato. He was in incomparably better position to be informed. Why not prefer the account of Moses?

The value of a controversy is that each side sees the other's weak points. It seldom results in admitting the inferiority of your own position; but once in a while a fair-minded man will be courageous enough to state that, through no fault of his own, he is unable to be more accurate than his opponent. This is about what Origen does, in taking up the charge of Celsus that the narrative of the baptism in the Jordan is so improbable a story as to require confirmation of first-hand witnesses, before he as a thinking pagan could accept it. In reply Origin frankly admits the paucity of sources for the history of Christianity; but demands to know if Celsus is willing to give up pagan history because it contains improbable incidents. The passage is worth quoting, for it shows how the most learned man of all the Fathers, the most subtle and comprehensive intellect, with one exception, which Christianity enlisted to its cause, recognized the weakness of Christian historiography but failed to see how it could be remedied.

> Before we begin our reply we have to remark that the endeavor to show, with regard to almost any history, however true, that it actually occurred, and to produce an intelligent conception regarding it, is one of the most difficult undertakings that can be attempted, and is in some instances an impossibility. For suppose that some one were to assert that there never had been any Trojan War, chiefly on account of the impossible narrative interwoven therewith, about a certain Achilles being the son of a sea-goddess Thetis and of a man Peleus, or Sarpedon being the son of Zeus, or Asculapius and Ialmenus the sons of Ares, or Æneas that of Aphrodite, how should we prove that such was the case, especially under the weight of the fiction attached, I know not how, to the universally prevalent opinion that there was really a war in Ilium between Greeks and Trojans? And suppose, also that some one disbelieved the story of Œdipus and Jocasta, and of their two sons Eteocles and Polynices, because the sphinx, a kind of half-virgin, was introduced into the narrative, how should we demonstrate the reality of such a thing? And in like manner also with the history of the Epigoni, although there is no such marvellous event interwoven with it, or with the return of the Heracleidæ, or countless other historical events. But he who deals candidly with histories, and would wish to keep himself also from being imposed upon by them, will exercise his judgment as to what statements he will give his assent to, and what he will accept figuratively, seeking to discover the meaning of the authors of such inventions, and from what statements he will withhold his belief, as having been written for the gratification of certain individuals.
>
> And we have said this by way of anticipation respecting the whole history related in the Gospels concerning Jesus, not as inviting men of acuteness to a simple and unreasoning faith, but wishing to show that there is need of candor in those who are to read, and of much investigation, and, so to speak, of insight into the meaning of the writers, that the object with which each event has been recorded may be discovered.

In so many words Origen admits that since the sources for

Christian history can not be checked up by external evidence, there is nothing left but to accept their main outlines on faith—the same faith the Greek has in the existence of Troy or the Roman in the early kings. But being a Greek—and above all a Greek in argument—he qualifies his faith by reason and explains away what seems improbable. In a way, therefore, we have before us a sort of sophisticated Herodotus after all, who eliminates myth to suit his perspective.

Had the Christian world been and remained as sophisticated as Origen, the conception of biblical history for the next fifteen hundred years would have been vastly different. But, although the allegorical method of biblical interpretation was used by nearly all the Fathers—by none more than by the pope whose influence sank deepest into the Middle Ages, Gregory the Great—and still forms the subject of nearly all sermons, the symbolism and allegory came to be applied less to those passages which contained the narrative, than to the moralizing and prophetic sections. The stories of the creation, of the flood, of Joseph, of the plagues in Egypt, of Sodom and Gomorrah, were not explained away. But about them, and the rest of that high theme of the fortunes of Israel, were woven the gorgeous dreams of every poetic imagination, from Origen to Bossuet, which had been steeped in miracle and rested upon authority. One turns to Sulpicius Severus, the biographer of the wonder-working Martin of Tours, for the bible story as it reached the Middle Ages. The narrative of the Old Testament was taken literally, like that of the New; the story of a primitive people was presented to a primitive audience. Allegory was not allowed to explain away passages which would have shocked the critical intelligence of Hellenic philosophers, for those were the very passages most likely to impress the simple-minded Germans for whose education the church itself was to be responsible.

There was, however, a better reason than mere credulous simplicity, why Jewish and Christian history were not allegorized away. It was because that history had been made credible by an exhaustive treatment of chronology. Christian scholars took up the task of reconciling the events of Jewish history with the annals of other histories, and worked into a convincing and definite scheme of parallel chronology the narrative from Abraham to Christ. Mathematics was applied to history—not simply to the biblical narrative but all that of the ancient world—and out of the chaos of fact and legend, of contradiction and absurdity, of fancy run riot and unfounded speculation, there was slowly hammered into shape that scheme of measured years back to the origins of Israel and then to the creation, which still largely prevails to-day. This is one of

the most important things ever done by historians. Henceforth, for the next fifteen centuries and more, there was one sure path back to the origin of the world, a path along the Jewish past, and marked out by the absolute laws of mathematics and revelation. An account of how this came about will carry us back into that complicated problem of the measurement of time, which we have considered before, in its general aspects. Now, however, we come upon the work of those who gave us our own time-reckoning, and who in doing so molded the conception of world history for the western world more than any other students or masters of history.

JAMES T. SHOTWELL.

COLUMBIA UNIVERSITY.

(To be concluded.)

A THEORY OF KNOWLEDGE WHICH FOREGOES METAPHYSICS. IN REPLY TO DR. SCHILLER

THERE are whole ranges of man's effort toward intelligent insight which, even in our day, are rendered taboo by the sign and bugbear Speculation. The advance in the sciences during recent decades has done much, it is true, to hearten and reassure the timid that the implied curse is not so fearsome. The mathematician leading the way, and physics, chemistry, biology following, have transformed the unapproachable place into a veritable treasure-house of their offerings. Even the Gradgrind type of Empiricist is no longer taken aback by supersensuous biophors, transcendental functions, or symmetrical points in muscles. But this resolving of the taboo is to be noted chiefly on one avenue of approach to the dreaded Metaphysic. It is recognized that the *outcome* of empirical investigation is usually metaphysical entities and supersensuous relations such as electrons, a perfectly elastic medium, or the relation called heredity. The fact that more mathematics can be used in dealing with certain phenomena than in those of recurrent and age-weary problems is not one to blind the modern physicist or biologist to the character of his conclusions, as frankly a projection of scientific imagination in accord with available data.

But is it less frequently recognized that the general assumptions and methods employed in any investigation are themselves hypotheses which also determine the resultant interpretation. Even the simple-minded would, it is true, realize that the method which admits two and only two terms (say matter and motion) presupposes that other assumed entities can be reduced to these terms. A method which interprets chemical qualities as groupings of "constituent" atoms or

electrons assumes that spatial relationships are functions of molecular structure. The psychologist who interprets mental phenomena in terms of the theory of biological survival not only construes human mental processes in terms of physiology; historically he has shown himself scornful, if not oblivious, of the mental processes called philosophical problems. Whether we start with simple belief in "hard sensations" (Bertrand Russell), and depend upon the mathematical postulates of Euclid or of Einstein, our process of thought will be *a priori* in the sense of committing ourselves for the time being to a whole system of interpretations. And that is why every possible assumption is so important to the open-minded investigator.

Now the tracing of implications in any given method is not necessarily a judgment concerning its validity. It may be called an effort to "save appearances," to avoid dogmatic suppression, it may be to use that method more intelligently. Should an inherent absurdity, a logical contradiction, or a group of data unaccounted for, be made known to such an investigator he would hardly proceed to a personal charge, much less declare your data irrelevant and your conclusions errors—because you did not use his method and start with his assumptions! To do so would imply a dogmatism comporting with omniscience in special revelation.

The present writer, in a paper entitled "A Mediæval Aspect of Pragmatism"[1] endeavored to set forth certain implications of the familiar doctrine that in any interpretation the mark of validity is a certain definable ethical quality in its product. It was an effort to determine what would result logically if such a method were coordinated with another more commonly recognized assumption which maintains that in the act of knowing things they are assumed to bear definite relationships to our mental processes. It was argued that in case we accept both assumptions we assert a functional relationship between the things known and the ethical quality of the knowledge process. This conclusion was characterized as an inference resulting from the hypothetical postulation of both principles. It aimed for the kind of logical adequacy represented in Euclidian demonstration, the premises having been assumed.

Now in a paper entitled "Methodological Teleology"[2] Dr. Schiller of Oxford "repudiates . . . all Professor Warbeke's presuppositions and contentions as a brood of misconceptions hatched out of a mare's nest" (p. 550). Pragmatism makes no assumptions whatsoever. It need not burden itself with anything supposed to be existent, with relationships between mental states and the things

[1] This JOURNAL, Vol. XVI., No. 8.
[2] This JOURNAL, Vol. XVI., No. 20.

they are supposed to cognize, or with the qualitative characters of mental processes which are said to be cognitive. A *method* as such is not a dogma; a theory of knowledge is not metaphysic. If anyone presumes to maintain that pragmatism is a theory of relationships between mental processes and things known, or that these mental states have recognizable character, he "presupposes an unpragmatic logic and an unpragmatic metaphysic." The inferences drawn are stigmatized as a "worship of Euclidian proof," and the outcome of a naïve metaphysic "which imagines that absolute knowledge of reality can be taken for granted" (549).

The present writer will gladly submit to the reader's judgment the question of whether he "takes absolute truth for granted," or regards hypotheses as dogmas. He may be said to trust somewhat hopefully in the process of inference. He still believes that, granted certain postulates, the demonstrations of Euclid successfully set forth the implications of his method. He also believes that the Euclidian method would be χαμαιλέοντα καὶ σαθρῶς ἱδρυμένον if it were to forego all axioms and postulates. He for one is reasonably sure that until absolute axioms are discovered, every investigation will, implicitly or explicitly, involve a nest of speculative assumptions, and that if these be examined with sufficient penetration they will be seen to take the form of metaphysical principles. He proposes now as an example in point to consider the paper of Dr. Schiller itself.

Pragmatism, says our author, is a method and involves no metaphysical hypotheses. It foregoes any assumption that there are definite relationships between mental states and their objects, or that these objects have relationships among themselves, or that a causal relation anywhere obtains, or that any quality can be ascribed to mental processes of the "truth-making" order, or "that there is a universe, *i. e.*, that we can handle what we believe to be the real by applying this notion to it" (550). And so "it is evident that nothing metaphysical is implied in the pragmatist's interpretation of either action upon or judgment about reality" (551).

Now it may be that Dr. Schiller understands by metaphysics something other than a systematic effort to coordinate our most general assumptions into logical coherence. But even apart from the question of what we conceive metaphysics to be, the catalogue of assumptions which Dr. Schiller forthwith proceeds to make has independent interest. The present writer will not presume to say whether the term metaphysical appropriately characterizes a "teleological constitution which is inevitable in *any* view of the world" (551). Or whether it be metaphysical to set up the principle: "For the mind to know the world it has to be presupposed that the

two are to some extent and in some sense commensurable" (551). Or again: "The difference between teleological and causal explanation is not one of principle. Both are *ex analogia hominis.*" Or again: "If there is any commensurability, however slight, knowledge is possible and attainable in varying degrees." Again: "If the mind works teleologically . . . we shall find the world most knowable if it is assumed to work similarly" (551). These are all of them "methodological" but they also have the form and substance (albeit without the closely reasoned concatenation and weighing of evidence) of matter to be found in a Bradley or a Royce. "Why should it [Pragmatism] scruple to make a postulate which is universal and legitimate?" inquires our author. And the fact, of course, is that many such are made. The chief difficulty with non-pragmatists is to realize how certain assumptions which are avowedly contradictory can do service at the same time and under the same conditions.[3]

[3] In this connection self-defense calls for a statement concerning the law of contradiction. Dr. Schiller, vexed by the "superficiality" of references necessarily brief in a short article, repudiates these references as "inaccurate." "Professor Warbeke . . . attributes to *me* a demand for the 'abrogation' of the law of contradiction which actually occurs in an exposition of Hegel!" (505). The only answer under these circumstances would seem to be to quote more *in extenso* passages in the *Formal Logic* discussed under the head: "Contradiction—as a Principle of Being, Either Meaningless or False; as a Principle of Thought, Self-contradictory." "Because all things change, they not only fail to preserve their identity, but also succeed in assuming contradictory attributes. Consequently the maxim that a thing can not be and not be *A* will only hold in cases where the thing has not changed since it was *A*. If it [Formal Logic] frankly admitted into its statement of the principle all the qualifications which may be relevant in its actual use, it would cease to have any impressiveness or meaning in the abstract. We should have to say, *e. g.*, '*A* can not be *A* and not-*A* at the same time, in the same place, in the same respect, in the same reference, in the same context, for the same persons—in short, under precisely the same circumstances; but probably such an ideal case never occurs and for heaven's sake don't ask me how little difference in any one of these respects may enable *A* to be not-*A*.' Yet it is clear that any such differences *may* vitiate an attempted application of the principle. The exact point at which a dog that eats bones will, from sheer repletion, refuse to eat another may baffle not only a formal logician but the best canine psychologist. . . . Clearly, therefore, the principle of Contradiction must not be used to dogmatize about reality, and the more it is kept out of metaphysics the better for both parties. (2) Regarded as a principle of thought, it defines the difference between affirmation and denial. Now it is an important fact, of a psychological sort, that affirmation and denial (in a sense) exclude each other. But it does not follow from this that verbally contradictory forms of affirmation and denial are incompatible. For we can never take it for granted that these forms express the real meaning of the judgments. . . . Even, however, where the two contradictory propositions were intended in their literal meaning, we saw that

The question of what is meant by good is very significant for one who writes on "The Ethical Basis of Metaphysics." In that Essay Dr. Schiller says: "Inasmuch as . . . teleological valuation is also the special sphere of ethical enquiry, *Pragmatism may be said to assign metaphysical validity* to the typical method of ethics. At a blow it awards to the ethical conception of *Good* supreme authority over the logical conception of *True* and the metaphysical conception of *Real.* For from the pursuit of the latter we may never eliminate the reference to the former. Our apprehension of the *Real,* our comprehension of the *True,* is always effected by beings who are aiming at the attainment of some *Good,* and it seems a palpable absurdity to deny that this fact makes a stupendous difference." In his criticism of my paper presumably the same author writes: "It is a further *mistake* of Professor Warbeke's *to ascribe a metaphysical intention to the doctrine* of the connection between the Real, the True and the Good, and of the supremacy of the Good. For that too is not a dogma" (552, italics added). How the sentence which follows: "The meaning intended . . . was concerned with the priority of the *epistemological* question over the *ontological*" (with which assumption the present writer is in complete accord) modifies in any way the hypothesis of an "ethical basis for metaphysics" remains a psychological riddle of the Sphinx.

To define good as the "physical well-being of humans" would indeed be protoplasmic in its crudity. And Dr. Schiller renders doubtful honor to the present writer in referring to the proposition: "The drama of creation is assumed to play about the moral character, mental attitudes, or physical well-being of humans," as follows: "Professor W. writes throughout as if good could mean nothing but the physical well-being of humans" (553). But the latter too is quite aware of the Platonic use of ἀγαθόν as connoting what

the result would not be two contradictory meanings but no meaning at all, just because there is a contradiction. Moreover . . . in the very act of affirming the identity of *A* we are defining it over against not-*A* and excluding not-*A* from it. Thus every assertion includes a denial, *omnis determinatio est negatio.* . . . Thus to affirm is at the same time to deny, and to deny to affirm; the very law of Contradiction seems to demand its own abrogation. The paradox of the situation is well calculated to provoke that philosophic stupor which appears to be the end of philosophy as commonly understood, and Hegel had the wits to exploit it. But though he was extensively accused of denying the Law of Contradiction, his argument was not refuted. Still he did not propound a principle that should be both applicable and undeniable, and nothing less than this can content Formal Logic" (pp. 121–123).

To what extent the above is to be regarded as an "exposition of Hegel" and in what sense "Contradiction as a principle of thought is self-contradictory" thus appears to be a question of significant assertion when "All things [including minds] change." Gorgian Skepticism seems here at the door.

one would rather be or have or do than anything else. And while he conceives philosophy to have relationships to desired ends, including honorable relations among philosophers, he is endeavoring, even by pragmatic methods to discover what form of good is demonstrably the criterion of scientific and philosophical truth. The answer to this question might be of value to pragmatism itself as well as to those who "babble . . . in Cloudcuckoodom" (553) even though it only make the latter resolve that silence is best.

JOHN M. WARBEKE.

MT. HOLYOKE COLLEGE.

SOCIETIES

THE TWENTY-EIGHTH ANNUAL MEETING OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

ABOUT one hundred and twenty-five psychologists assembled at Harvard University for the twenty-eighth annual meeting of the American Psychological Association on December 29, 30 and 31. The programme for Monday included a session for general psychology, an exhibit of new apparatus and teaching materials, a session for experimental psychology and one for intelligence tests. On Tuesday the psychologists met jointly in the morning with the American Association of Clinical Psychologists and in the afternoon with the American Anthropological Association; the evening being the occasion of the annual dinner and the address of the retiring President, Professor Walter Dill Scott, of Northwestern University. Following the close of the meetings Wednesday noon, many guests visited the Massachusetts State School for Feeble-Minded, the Judge Baker Foundation, the Carnegie Nutrition Laboratory, McLean Hospital, the Psychopathic Hospital and other institutions in the vicinity.

The programme gave 6 titles under general psychology, experimental psychology 16, intelligence tests and clinical psychology 21, comparative psychology 2, social and religious psychology 3, and applied psychology 7. The greatest interest seemed to center in the sessions for intelligence tests, clinical psychology and the work of psychologists in the service of the war and industries. Among the best contributions of the meetings were the results of work of psychologists in various phases of war activities. The pronounced development of the technique of trade-testing, the thorough tryout of intelligence tests by their use on more than a million and a half recruits, with subsequent revision of older notions of median mental levels of unselected as well as psychoneurotic, foreign-born, colored

and other individuals, the need of tests other than those of general intelligence for diagnosis of psychoneurotics, and vocational aptitudes and the need of systematic training and classification of workers in the rapidly growing field of clinical psychology, may be considered the main features of the meetings. That interest is not diminishing in the work in laboratory and experimental psychology on more general topics, was evidenced by the total of 16 papers in these fields.

During the annual business meeting, held Tuesday afternoon, Shepherd I. Franz, Government Hospital for the Insane, Washington, D. C., was elected President of the Association for the coming year; Edward G. Boring, Clark University, Secretary-Treasurer; H. S. Langfeld, Harvard University, and M. V. Bingham, Carnegie Institute of Technology, were elected to the Council. Chicago was selected for the convention in December, 1920. Twenty-seven new members were voted into the association and the deaths, during the year, of John Wallace Baird, Edward Cowles, and August Hoch were reported.

H. S. Langfeld, of Harvard University, reported information just received concerning the work of psychologists in the German army. Tests were devised and applied for the selection of motormen, motor-vehicle drivers, aviators, and for skilled labor in many industries. Apparently but few new methods of selecting men on the basis of innate ability were developed and in the field of trade-testing and in measurements of general intelligence, the work of psychologists in Germany fell short of the accomplishments of psychologists in America.

On the afternoon of Tuesday the Association met jointly with the American Anthropological Association at which time Clark Wissler, American Museum of Natural History, representing the anthropologists, and W. V. Bingham, Carnegie Institute, representing the psychologists, urged a closer coordination and cooperation of the work in the two fields of science. Dr. Wissler pointed out the differences in the equipment and approach of psychologist and anthropologist, the advantages that would result from a combined attack in many cases, and the eagerness of workers in his field to cooperate in the solution of social and industrial problems. Dr. Bingham indicated the practical advantages of a division of anthropology and psychology, enabling at least an annual interchange of opinions and practises. A paper prepared by J. R. Angell, University of Chicago, was read in which both groups of workers were urged to cooperate with the National Research Council in the conduct of investigation.

The retiring President, Walter Dill Scott, Northwestern Univer-

sity, addressed the Association on the subject *Changes in Some of Our Conceptions and Practises in Personnel* on the evening of the annual dinner. Evolution along five lines was emphasized: (1) A history was given of changes in the concept of the amount and nature of individual differences from the older belief that peoples were originally much alike and that such differences as appeared were due to environmental factors, to the present belief that individuals differ enormously in all traits and that such differences are largely innate. "The greatest achievement of the Association has been the establishment of the fact of individual differences and its applications to education, politics, industry and economics."

(2) The importance of reasoning as a factor in adjustment has been superseded by the considerations of instincts, emotions and habits. The operation of instinctive trends as the spring of action and the sources of discontent in industrial life was illustrated by concrete cases. It is not the violation of the workers' logical processes that brings unrest and discontent so much as thwartings of his pride, his desire of social approval, of mastery—his instinctive and emotional trends.

(3) Education in the schools or in the factory must take into account the unlearned forms of reaction to features of the environment and seek to so order the individual and his environment that the desirable adjustments may be made. The work of the personnel director in industry must be enlarged and his function must be that of providing the approved experiences so that desirable habits of response will be built up. Mere richness of content or training of general faculties will not suffice.

(4) Changes have taken place in the concept of man and his environment. A man is not the victim of his environment, he is not the master of it, nor is his function that of subduing or opposing it. The two should evolve together. In industry, the man and his job are not opposed, nor does the concept of selecting the man to fit the job—finding a square peg for a square hole—adequately express the present point of view. The function of the personnel manager is the "creation of the worker in a working situation." The work must be arranged to satisfy the human wants of the worker and he should be set to the task most in harmony with his particular talents and interests. There must be a correlated improvement of the work and the workers.

(5) The last point led to a survey of the evolution of vocational guidance from the chance methods of superstition, guess and incidental inclinations to the modern technique of mental, physical and vocational tests, statistical methods and the like. "In the last century the productivity of the worker has been doubled by the

activities of some 2,000 minds through changes in the material world. In the present century equally great increases in productivity may be expected through the adjustment of worker to the work."

Following are brief summaries of papers presented in the various sessions:

Session for General Psychology

G. V. N. Dearborn, of the Sargent School of Boston, described cases of correlation between arterial blood pressure and certain states of mind. Arterial blood pressure, under control of the autonomic nervous system, is but slightly susceptible to voluntary control but decidedly affected by perceptual or ideational influences provoking emotional reactions. As one aspect of such reactions, arterial blood pressure may sometimes fall as much as 35 mm. during a shift from marked anxiety to calm in the course of 15 minutes. A prescription for "relaxation" which the speaker identified with diminished activity of the autonomic system calls for "pleasant thoughts of non-exciting sort" or "making the mind a blank."

A Behavioristic Interpretation of Concepts was offered by R. C. Givler, of Tufts College. Concepts are "written or spoken words whose meaning is a motor attitude, attunement or set" which occurs as a response to them. The theory, similar in many respects to that of Professor Washburn, makes of meaning a more or less incomplete reaction of eye, hand, articulatory or autonomic muscles. A percept is an acquired motor reaction—thinking is a flow of neuromuscular-tension attitudes which "normally eventuate in some overt reaction" or a "rehearsal or reiteration of action."

A graphic representation of the tonal series from lowest to highest audibility, indicating the volumic spread of the base line, with ordinates for pitch-brightness and intensity was shown by R. M. Ogden, of Cornell University. Evidence was presented indicating brightness to be an independent variable as well as pitch, intensity and volume.

E. G. Boring, of Clark University, offered several cautions concerning the uncritical acceptance of the distribution of mental traits according to the normal probability curve. The form of the distribution depends, for one thing, upon the unit of measurement adopted. If the normal law, moreover, is the law of chance, then two mutually dependent variables for which the relationship is not simply linear—such as height and volume, which varies roughly as its cube—can not have the same form of chance distribution. If the distribution for height is normal, the distribution for volume can not be.

In a paper entitled *Are there any Instincts?* Knight Dunlap, of

Johns Hopkins, criticized looseness of classification of instincts on teleological grounds as confusing and often misleading. We should speak of "instinctive activities" defining the situations and responses as well as may be and discard, except under necessity, such complex groupings as "maternal instinct" or "fighting instinct" and the like. Instances of the same instinctive activities being listed under several "instincts" by the same author were cited.

Sessions for Experimental Psychology

E. S. Robinson, of Yale University, found in three experiments that decided retroactive inhibition of recall occurred when material similar to that originally learned is studied immediately after. Little or no retroactive inhibition was found when the interpolated study involved dissimilar material. The influence of competition produced by the subject keeping his own score in the case of motor reactions to sound or light is to keep the tonicity of specific groups of muscles (finger-eye-ear accommodation) at a higher level and to reduce efficiency in scoring results, according to experiments conducted by A. P. Weiss, Ohio State University.

That the rational element in belief has been much over-estimated appears from experiments reported by A. A. Roback, of Harvard University. In judging passages, given anonymously, from such writers as St. Anselm, St. Thomas Aquinas, Neitzsche, Swedenborg and others as (*a*) absurd, (*b*) credible, (*c*) acceptable, (*d*) convincing, the congruity of imagery induced by the passage with memories of similar situations, plus emotional responses and muscular sets, seems fundamental. Acceptance is characterized by "a tingling in the chest and feeling of well being"; rejection by tenseness, contraction of muscles in throat and chest, checking of respiration and other kinæsthesis. Repeated reading of a passage generally serves to modify the original attitude in the opposite direction, convincing passages shifting to doubt, absurd passages becoming more credible.

F. A. C. Perrin, of the University of Texas, reported upon a variety of tests of motor ability, involving simple and complex reactions. A complex motor ability can not be readily explained as a simple compound of such specific functions as accuracy, rhythm, and speed. The nervous mechanisms involved in ambidexterity and fine coordinations resist analysis at present. The correlations between university grades, mental tests and estimated "character" and success in motor abilities were low. Emotional disturbances and attitudes—feeling of inferiority, self-consciousness—produce marked changes in performances in such motor functions.

The prevalent belief that our judgments in the fields of appreciation of music or literature as well as in morals are considerably in-

fluenced by the contrary opinions of the majority or of experts in these fields is supported by experimental data obtained from college students by H. T. Moore, of Dartmouth College. Comparisons with control groups yield results showing that the knowledge of contrary opinions of the expert or the majority produces reversals of individual opinions in matter of speech amounting to 4 or 5 times mere chance. Moral reversals under majority influence are 4.7 times chance, whereas reversals of musical preferences as a result of expert or majority opinions is about twice chance.

Circulatory changes in the arm as the result of mental or physical work were studied by John E. Anderson, of Yale University, by means of a Lehmann arm plethysmograph. Physical work for a one-minute period is accompanied by vaso-dilatation in 47 to 74 per cent. of the cases, followed usually by a continuous tendency toward constriction when work is continued for an hour. Mental work—counting, reading, adding, *etc.*—shows vaso-dilatation in the arm in approximately 75 per cent. of the cases. The volume variation is decidedly individualistic and constant for the same subject in repeated tests.

Using a new form of substitution test (nonsense material to be transliterated into ciphers), H. M. Johnson and Franklin C. Pashal, of the U. S. Air Service Medical Research Laboratory, found a definite tendency toward negative acceleration of improvement when the oxygen supply became "moderately" low. Individual differences occurred, but in general a marked loss of speed and accuracy or both appears, accompanied by increased effort, on occasions, to compensate for obviously diminished performance. The curve of learning shows frequent spurts until a certain minimum of oxygen supply brings a breakdown.

C. E. Seashore, University of Iowa, demonstrated the localization of sound by wave phase in open-air conduction. Certain laws of the movement of this phantom sound with reference to synchronism, distance, pitch, intensity, timbre and direction of the two courses were presented together with a wave phase localization interpreted in terms of intensity.

The Influence of Expectation on Supraliminal Discrimination of Sounds was the subject of a paper by L. R. Geisler, of Clark University. The intensity or extent of a variable stimulus is the more erroneously judged the more it differs from the expected standard. The tendencies to err are always in the direction of the expected standard. The errors are greater when the expected standards are presented to the sense, than when they are merely in the form of recall of a standard presented previously. The explanation suggested is that errors are due to definite muscular sets involved in the

expectant attitude which interferes with the proper neuro-muscular readiness to receive the new stimulus. Samuel W. Fernberger, of Clark University, also reported upon an experiment designed to test expectation, in the case of lifted weights. In one series of tests the central stimuli (96 and 100 grams) immediately followed the heaviest stimulus (104 grams); in a second series, the central stimuli followed the lightest stimulus (88 grams). There appeared a constant tendency to judge the critical stimuli (96 and 100 grams) lighter when they followed the 104 gram weight and heavier when they followed the 88 gram weight. Practise served to increase rather than decrease such errors of expectation.

L. T. Troland, of Harvard University, found that when a spot of light of appropriate area is thrown upon the retina in the general region of the yellow spot, bands of luminosity can often be seen which connect the stimulus spot with the vicinity of the blind spot. A study of the course of these bands for different shapes and locations of the stimulus spot, in comparison with the histology of the nerve fiber layer of the retina indicates that they are due to secondary stimulation of retinal fibers by the impulses passing along adjacent fibers.

That the determinants of the optimum intensity of light for ordinary work should be made by monentary exposures of visual stimuli rather than by prolonged (say a 3 second) observation appeared from experiments reported by P. W. Cobb, Captain M. C. Medical Research Laboratory, Mitchell Field, L. I. The eye in ordinary work functions in series of momentary fixation pauses, and tests of visual acuity should conform to such habits. It was suggested that eye fatigue under unfavorable distributions of light might be due to disturbances in habits of fixation rhythms owing to a slowing of the retinal responses, paralleling the effort attending the attempt to adjust one's walking movements to a step much different in length or frequency from the customary one.

In response to the need for a rapid test to select men for lookout or signal service work in the Navy, an acuity lantern and illumination scale for the detection of small errors in refraction was devised by C. E. Ferree and G. Rand, of Bryn Mawr College. Roughly, but 25–30 per cent. of the men on battleships have sufficient acuity of vision to qualify for such observational work. The apparatus devised has proved of value in clinical practise for the determination of the exact amount and placement of the correction of astigmatism.

Three methods of securing physical measurements and specifications of color were described by Lloyd A. Jones and Prentice Reeves, of the Eastman Kodak Co. W. R. Niles, of the Carnegie Nutrition

Laboratory, explained an apparatus of simpler construction and operation than the Dodge photographic technique for recording ocular movements. This apparatus was used for obtaining a speedy and reliable quantitative score for the accuracy of eye-hand pursuit coordinations of candidates for service as aviators. A correlation of + 0.40 was found between success in this test and "progress in learning to fly."

The Session for Experimental Psychology closed with a paper by Captain Garry C. Myers, Camp Upton, concerning the rôle of imagination as an indication to the motives, interests and aptitudes of young children.

Session for Intelligence Tests

Much interest was evoked by data presented by E. A. Doll, of Princeton University, from a million and a half army recruits and other subjects as regards the median mental age of adults, commonly assumed to be about sixteen years for unselected groups. The Stanford-Binet median mental age equivalent of army recruits is thirteen years; of negro and foreign-born recruits ten years; of adult male state prisoners thirteen, the actual tests used in each case being the Army Alpha. Five hundred typical public-school children examined by Alpha show no increase in median scores by age after thirteen, the same being true of juvenile delinquents, ages sixteen to thirty years. From these data the suggestion was made that the median mental age level of native white adults is approximately thirteen years. No attempt was made to determine the life age limit of mental age growth, since, it was suggested, "emotional development, skill, acquisitions aptitudes and the like probably continue to develop indefinitely." The upper age limit of feeble-mindedness is not coincident with the lower mental age limit of normality, since it appeared that the borderline zone for feeble-mindedness may cover a range from mental age seven to thirteen years. The application of mental age or I.Q. as criterion of mental defect is specially limited in the case of individuals of ten or more years chronological age. Data harmonizing with these results was presented by F. L. Wells, of McLean Hospital. The median I.Q. (Stanford scale) of 102 cases of mental breakdown at McLean is 88, but I.Q's of 100 are frequent and I.Q's of 119 have been found in patients conspicuously incapable of self-maintenance. Only in the organic psychoses does the breakdown regularly involve the ideational capacities with which the intelligence scales are concerned. Normal and even superior "intelligence" is often associated with grave judgment and conduct disorder. Intelligence scales measure essentially ability to deal with ideas, as distinct from ability to deal

with things or with people. Psychotic breakdowns are essentially failures of adjustment to the social environment. The speaker emphasized the minor rôle of "intelligence" (ideational capacity) in mental balance, urging a conception of education as a discipline of character rather than knowledge.

With a few changes, the Binet tests were successfully employed by S. P. Hayes, Mt. Holyoke College, in measuring the intelligence of the blind. A modification of the Pressey group tests also gave high correlations with the Binet scores and abilities estimated by teachers. E. L. Woods, Wisconsin State Department of Public Instruction, reported on the use of the recently devised Virginia tests Alpha in group testing of intelligence of delinquent girls. J. B. Miner, Carnegie Institute of Technology, displayed a method of utilizing three-dimensional models for representing individual differences in complex abilities such as salesmanship. Certain relations not now taken care of in frequency tables, correlations, multiple regression, *etc.*, can be displayed by such models.

L. W. Webb, Northwestern University, found the Pearson coefficient of correlation between rate of reading (Monroe Silent Reading Test) and the Army Alpha and Thurstone tests *A* and *B* ranging from $+0.47$ to $+0.59$; comprehension of reading gave coefficients ranging from $+0.48$ to $+0.69$. Speed and comprehension of reading correlate $+0.85$. The speaker contended that these correlations show too large a dependence of the pencil and paper tests upon rapidity of comprehension in reading.

L. M. Thurstone, Carnegie Institute of Technology, found the cycle-omnibus form of intelligence test to be of great service in furnishing data for recommending candidates for admission to engineering colleges, in advising committees on scholarship in cases of delinquent students and in giving vocational counsel. S. S. Colvin, of Brown University, reported a correlation of $+0.60$ between success in The Brown Intelligence Tests and the standing in college for the first two terms. The Thorndike Tests, first used in 1919, proved to be of great prognostic value and showed a high correlation with itself in repeated tests on the same subject.

Joint Meeting with the American Association of Clinical Psychologists

D. Mitchell, Pelman Institute, defined clinical psychology as a "professional practise" as contrasted with the "science" of laboratory psychology. Clinical psychology was again contrasted with "applied psychology" largely on grounds that the latter field may have no relation to the individual. Clinical psychology is the practise of determining mental status in order to prescribe kinds and

methods of education, of detecting specific abilities and disabilities of vocational significance, and the manipulation of emotional development for desirable social reactions. Dr. A. F. Bronner, Judge Baker Foundation, emphasizing the function of clinical psychology as that of individual diagnosis, gave illustrations of the failure of general intelligence tests to betray significant variations in mental equipment. The necessity of devising tests for many specific abilities was urged. Florence Mateer, Bureau of Juvenile Research, has found that whereas the mental age or I.Q. is of little value in the detection of psychopathic conditions due to syphilis, a detailed account of the range of plus and minus scores, and more precise measures of the individual responses often give a reliable clue to either congenital or acquired syphilis. The same type of analysis generally differentiates the psychopathic from the non-psychopathic, no matter what the mental age may be.

E. E. Southard, Psychopathic Hospital of Boston, presented a table of terms for the systematic expansion of terminology for mental symptoms and processes. Arnold Gessell, Yale University, discussed several cases of hemi-hypertrophy in relation to mental defect. Morton Prince gave several illustrative cases of a method of securing dissociation of the mind whereby one of two or more antagonistic trends becomes dominant, thus permitting an insight into the conflicting motives.

H. L. Hollingworth, Columbia University, presented a new interpretation of functional neuroses, in terms of redintegrative reactions. In normal processes of perception or thinking the stimulus is a portion of a former gross situation which redintegrates the total responses. The distinction between the redintegrative reaction of the normal and the neurotic is that in the former only a significant detail provokes the total reaction—not any chance item. Redintegration may take place on the cortical level leading to ordinary understanding, thought or perception, or it may take place on the postural level giving the picture of conversion hysteria, or it may take place on the autonomic level giving rise to the anxiety neurosis. If cortical redintegration takes place, the postural and autonomic responses may be determined by the total pattern of the stimulus and are not redintegrative. Cortical immaturity or weakness would mean greater redintegrative predisposition on the other two levels. Since the postural level is more closely connected with the cortical level than is the autonomic, intellectual inferiority would predispose one more definitely toward conversion hysteria than toward the anxiety type. Measurement of psychoneurotic soldiers shows that not only are they in general intellectually inferior, but also the conversion forms represent a lower intelligence level than do the anxiety forms.

A most valuable and practical method of evaluating school attainments in terms of mental ability is the result of studies by Rudolf Pintner, of Ohio State University. A mental test alone is not sufficient to diagnose a child accurately; measures of school attainment based on both age and grade norms are needed. Two survey tests, one mental and one educational, were devised and applied to 1,500 cases. Percentile values are converted into a so-called "index" ranging from zero to one hundred. The median indices serve as a measure for the school. A high mental age with low educational index indicates deficiencies in instruction, whereas a close agreement between the two indices indicates efficiency in the school. In the same way different classes in the same school or different individuals in the same class may be compared, enabling one to correlate innate ability with possible attainment and to apply corrective measures when the need appears.

Session for Educational and Comparative Psychology

J. F. Dashiell, University of North Carolina, pointed out certain errors in the straightforward statistical explanation of learning in the maze by the factors of frequency and recency. The contention was based upon such findings as these: a rat will enter a blind alley opening straight ahead 5 times out of 8, the exit from a blind alley opening at the side is more likely to be in a forward than in a reverse direction in about the ratio of 3.5 to 1.

J. L. Ulrich, Johns Hopkins University, in maze experiments with rats emphasized the rôle of reflex mechanisms in learning as opposed to sensory motor connections or "sensory impressions." The reflex extension and flexion of the rat's limbs were discovered to be of great influence upon learning in the maze.

W. T. Shepherd, Washington, D. C., in a study of 148 children, ages eight to thirteen years, emphasized the importance of the educational and social experiences and of the influence of respected teachers or friends upon the development of religious ideals.

Tests devised to measure such functions as persistence, conscientiousness, application and emotional control are being applied to Junior High School and other students by S. L. Pressey, of Indiana University. Correlations of results from these tests with general intelligence, health and estimates of intelligence were presented. L. C. Pressey, Indiana University, urged group testing of general intelligence in the primary school as a means of studying the effect of school training upon tests subsequently given. Data permitting comparisons of test findings on children of the laboring and professional classes, whites and negroes, *etc.*, were presented. E. A. Kirkpatrick, Fitchburg State Normal School, believes that

normal school pupils may be trained in fifteen hours to use the Binet tests in classifying pupils. Less time is required to handle group tests, but much more is needed to enable the student to score, tabulate and interpret the results. Daniel Starch, University of Wisconsin, found in data obtained from 1,000 first-year pupils, that approximately equal mental ability may exist with great differences in language ability. Correlations ranging from $+0.25$ to $+0.28$ between interest in college subjects and grades received in them were found by K. W. Bridges, Ohio State University. The correlation between interest and the subject's estimate of his ability in the courses was higher $+0.50$ to $+0.59$.

Session for Social and Applied Psychology

F. H. Allport, Harvard University, reported on experiments dealing with influence of the presence and actions of other human beings upon the motor, emotional and mental performances of a subject. The chief results noted were (1) a facilitation of movement, (2) a compulsion toward haste at the expense of quality, (3) an objective direction of attention, (4) experiences of rivalry, and (5) tendency toward social conservatism in the returning of judgments.

The auditory reaction-time tests used chiefly by the Italian Government for the selection of aviator pilots were applied to successful and unsuccessful American aviators by F. C. Dockeray and S. Isaacs, with satisfactory results. Success in a rather simple test of muscular steadiness showed a high correlation with ability in flying.

E. P. Frost, of the Rochester Chamber of Commerce, emphasized four industrial problems which offered special opportunities to the psychologist: (1) The reduction of labor turnover by means of selecting men adapted by intellect, temperament and special abilities to the particular task; (2) by devising programmes for the Americanization of foreigners and illiterate through wise education; (3) by testing the problems of the shop foreman both as to the management of labor and the conduct of the vestibule or training school, and (4) by contributing to the effectiveness of continuation schools where instruction is given during periods of the working day.

From data obtained in several extensive investigations cited by E. L. Thorndike, Teachers College, Columbia University, it appears that even experienced judges can not treat an individual as a compound of separate qualities, such as intelligence, industry, technical skill, reliability, *etc.*, and to assign a magnitude to each of these in independence of the others. The correlations between such traits are too high and too even, the ratings being apparently affected by a

marked tendency to think of the person in general as rather good or rather inferior and to be influenced in all judgments by this general attitude. It was suggested that observers should report *the evidence,* not a rating, and that the ratings should be given on the evidence for each quality separately.

D. G. Paterson and B. Ruml, The Scott Company, described a method of obtaining more objective criteria in the use of rating scales. By the older method, leadership, for example, might be defined and judged in terms of initiative, force, self-reliance, tact, loyalty, cooperation, *etc.* By the suggested scale one would judge the ability to develop a loyal and effective organization by administering justice, inspiring confidence and winning the cooperation of his subordinates—a "man to man" type of comparison. Tendencies for single judges to estimate too high or too low might be corrected, by the devise of "Master Scales."

A. W. Kornhauser and B. Ruml, of the Scott Company, reported on some recent developments in trade-test theory. The usual form of trade test consists of a fixed set of questions with norms established for the test as a whole. A new departure consists in establishing norms for the individual questions. Hence (1) a test may be made as brief as desired, (2) it may be varied at will to prevent coaching, (3) it becomes unnecessary to give easier questions than those already passed or more difficult ones than those already failed, (4) new individual questions may be added or undesirable ones dropped without necessitating a restandardization of the norms for the whole test. By a change in the use of regression lines from the method employed in the army test, wherein the average score in the test giving the grade of trade ability, to the reverse wherein the actual numerical chance that a man making a particular score or an individual question is a novice, apprentice, journeyman, or expert, it is possible (1) to place each question at the level where it differentiates most effectively, (2) questions may be weighted in proportion to their differentiating value, and (3) questions may be weighted differently if passed or failed.

ARTHUR I. GATES.

TEACHERS COLLEGE,
COLUMBIA UNIVERSITY.

REVIEWS AND ABSTRACTS OF LITERATURE

General Psychology. WALTER S. HUNTER. Chicago: The University of Chicago Press. 1919. Pp. xiii + 351.

This is another elementary text on general psychology. So many brief books on psychology have been published in the United States that there seems to be no excuse for extending the list.

Hunter's three-hundred-and-fifty-page text, however, differs decidedly from many others. Students in general courses will find this book very interesting as a text-book stating the fundamental facts, procedures and applications of psychology, rather than presenting the foundation for students who are preparing to do advanced work in the subject.

The author assumes that the usual student is first interested in the general field of psychology. He therefore devotes the first four chapters of his text to the following subjects: Subject Matter of Psychology, Animal Psychology, Individual and Applied Psychology, Abnormal Psychology, Social and Racial Psychology. The confining of the above four subjects to 110 pages makes their treatment seem rather brief and unsatisfactory. It does, however, introduce students to those fields about which there is the most inquiry on the part of the general public. The selected bibliographies enable one to continue reading in the field of his peculiar interests.

Part II. takes up Normal Human Adult Psychology. The discussion is very much like that found in the usual elementary text-book. The author has succeeded admirably in drawing most of his illustrations from recorded experiments. This introduces the student to experimental source material rather than to the simple, insipid personal experiences so often used by psychological writers.

The book is illustrated with 55 figures, distributed through the entire volume. This adds something to the attractiveness of the text.

The theoretical standpoint of Professor Hunter is one of a combination of behaviorism and structuralism. He does not rule out introspective data, but supplements it with objective data wherever possible.

The material presented, along with some reference work and supplemental studies, would occupy a class for one semester. With the increased public interest in psychology, along with its increased application, there seems to be a need for more extended courses in general psychology. Professor Hunter's book will doubtless be adopted by many instructors, but it will have to be supplemented with a great deal of library and laboratory material.

J. V. BREITWIESER.

UNIVERSITY OF CALIFORNIA.

JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. May-June, 1919. *La nature et le mouvement d'après Aristote* (pp. 353–368): OCTAVE HAMELIN.—Aristotle's theory of movement is markedly dynamistic and vital-

istic, and tends to become idealistic. *La philosophie française en Amérique* (pp. 369–423): WOODBRIDGE RILEY. – This second article deals especially with the history of Comte's influence and of Positivism in America. *La spiritualization des tendances* (pp. 424–451): F. PAULHAN. – Discusses the organization, spiritualization, and socialization of tendencies, with an examination of the diverse forms of spiritualization, the mental conditions favoring spiritualization or unfavorable to it, and distinguishes between spiritualization and idealization. *Remarques sur la psychologie collective* (pp. 455–474): J. SAGERET. – "The progress of thought has . . . the paradoxical character of resulting in an increased solidarity between the individual and humanity and of augmenting at the same time the facility with which the individual detaches his soul from humanity; the progress of thought renders man more social in his formation, more individual in the power of his spirit." *Revue critique. Sur la philosophie de la guerre. Analyses et Comptes rendus.* De Witt H. Parker, *The Self and Nature:* ANDRÉ LALANDE. John Laird, *Problems of the Self:* R. GUÉNON. Julien Tiersot, *Un demi-siècle de musique française:* LIONEL DAURIAC. T. M. Moustoxidi, *Les systèmes esthétiques en France:* CHARLES LALO. Gonzague Truc, *La Grace:* H. DELACROIX. F. Moral, *Essai sur l'introversion mystique:* H. DELACROIX. *Le Pangermanisme philosophique:* TH. RUYSSEN. *Les Cahiers de Probus:* E. CRAMAUSSEL. *Revue des Périodiques.*

Cory, Herbert Ellsworth. The Intellectuals and the Wage Workers: A Study in Educational Psychoanalysis. New York: The Sunwise Turn. 1919. Pp. 273.

Elliot, Hugh. Modern Science and Materialism. New York and London: Longmans, Green and Co. 1919. Pp. 211. $3.00.

Lodge, Rupert Clendon. An Introduction to Modern Logic. Minneapolis: Perine Book Co. 1920. Pp. xiv + 361.

Shaw, Charles Gray. The Ground and Goal of Human Life. New York: New York University Press. 1919. Pp. xii + 593. $3.50.

NOTES AND NEWS

PSYCHOLOGICAL TERMINOLOGY

THE Committee on Terminology of the American Psychological Association is taking up for examination terms in the fields of Sensation and Cognition. Psychologists interested in the precise use of terms are invited to assist the committee in its work by calling the chairman's attention to—

(1) Psychological terms used with two or more different mean-

ings (whether distinguished or not), and terms used indefinitely or ambiguously in contemporary writings.

(2) Pairs or groups of terms which lead to confusion when used interchangeably.

(3) Foreign terms needing definition or translation.

(4) Books and articles containing systematic lists of cognate terms, or discussions of ambiguous terms. (Full references desired.)

It is a matter of prime importance in any science to clear up double meanings and imperfect synonyms. The word *feeling* is used in standard psychological works with several different meanings. The words *intellect* and *intelligence* are used by some writers interchangeably, while others draw a sharp distinction between them. There are many instances in the literature of both kinds of confusion.

The committee wishes to include a large number of such terms in its next report, either defining and distinguishing them or citing discussions in easily accessible sources. This list will not be confined to sensation and cognition, but will cover the entire field of psychology. Will readers of this magazine assist the committee to make the list fairly complete?

HOWARD C. WARREN,
Chairman.

PRINCETON UNIVERSITY,
PRINCETON, N. J.

IT may not be generally known that on October 31, 1918, the library of the University of Nancy was struck by an incendiary bomb and 160,000 volumes destroyed. Such a loss is very difficult to replace, and the university appreciates very greatly any contributions of books such as a university library ought to possess, and any offers of desirable periodicals.

THE prize of $100 offered in 1914 for the best paper on the Availability of Pearson's Formulæ for Psychophysics (this JOURNAL, Vol. XI., p. 27 f.), has been awarded to Dr. Godfrey T. Thomson, Armstrong College, Newcastle-upon-Tyne, for a paper entitled "On the Application of Pearson's Methods of Curve-Fitting to the Problems of Psychophysics, especially to the Data of Urban's Experiments on Lifted Weights: in four Parts, together with Part V., On the Use of Compound Curves in the Analysis of Heterogeneous Material, and Part VI., On an Outline of an Attempt to Make a Generalized Psychometric Function."